DOCUMENT RESUME

ED 206 748 UD 021 534

TITLE	Sarah J. Hale High School Project SABER. ESEA Title VII. Final Evaluation Report, 1979-80.
INSTITUTION	New York City Board of Education, Brooklyn, N.Y. Office of Educational Evaluation.
SPONS AGENCY	Office of Bilingual Education and Minority Languages Affairs (ED), Washington, D.C.
BUREAU NO	5001-42-07625
PUB DATE	[80]
GRANT	G007503680
NOTE	42p.; For related documents: see UD 021 533-535, and ED 142 664.
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Achievement Gains; *Bilingual Education; Class Organization; Curriculum Development; *English (Second Language); High Schools; *Hispanic Americans; Parent Participation; Program Descriptions; *Program Effectiveness; Program Evaluation; *Second Language Instruction; Spanish Speaking; Staff Development
IDENTIFIERS	*Bilingual Programs; Elementary Secondary Education Act Title VII; Limited English Speaking

ABSTRACT

This is an evaluation of a Title VII Bilingual Program conducted at a New York City High School in 1979-80. The report contains information on the program goals and objectives, the school site, and the student characteristics. Aspects of the instructional component discussed include programming, mainstreaming, and program funding. Non-instructional components covered are curriculum and materials development, supportive services, staff development, and parental and community involvement. Tables show Spanish speaking students' performance on the Criterion Referenced English Syntax Test, and on English Spanish Reading, and mathematics achievement tests. The number and percentage of mainstream and bilingual program students passing content area courses is given, as are student attendance figures. (APM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED206748

JUN 23 1981

FINAL EVALUATION REPORT

ESEA Title VII

Grant Number: G007503680

Project Number: 5001-42-07625

SARAH J. HALE HIGH SCHOOL

PROJECT SABER

1979-1980

Principal: Mr. Bernard Wolinez

Coordinator: Ms. Alba Del Valle

Prepared By The

BILINGUAL EDUCATION EVALUATION UNIT

Ruddie A. Irizarry, Manager
Judith A. Torres, Evaluation Specialist
Armando Cotayo, Consultant
Frank O'Brien, Ph.D., Consultant

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Ronald Edmonds
NYC Public Schools

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

NEW YORK CITY PUBLIC SCHOOLS
OFFICE OF EDUCATIONAL EVALUATION
RICHARD GUTTENBERG, ADMINISTRATOR

UD021534

TABLE OF CONTENTS

	PAGE
Introduction	1
Program Goals and Objectives	2
Site	3
Student Characteristics	3
Program Description	5
Philosophy	5
Program Organization and Personnel	5
Instructional Component	8
Programming and Mainstreaming	8
Funding for Instructional and Non-Instructional Components	10
Non-Instructional Component	13
Curriculum and Materials Development	13
Supportive Services	14
Staff Development	16
Parental and Community Involvement	17
Assessment Procedures and Findings	19
Conclusions and Recommendations	33

LIST OF TABLES

		PAGE
TABLE I	Project SABER Organization	7
TABLE II	Number and Percentage of Students Leaving the Program, and Reason Given for Exit	11
TABLE III	Instructional Personnel by Funding Source	12
TABLE IV	Non-Instructional Personnel by Funding Source	13
TABLE V	Subjects Taught Daily in Spanish	15
TABLE VI	Results of the CREST; Reporting the Number of Objectives Mastered (Fall)	22
TABLE VII	Results of the CREST; Reporting the Number of Objectives Mastered (Spring)	23
TABLE VIII	English Language Achievement	24
TABLE IX	Spanish Reading Achievement	27
TABLE X	Mathematics Achievement	29
TABLE XI	Number and Percentage of Mainstream and Bilingual Program Students Passing Content Area Courses 1979-1980	30
TABLE XII	Attendance	32

Project SABER - Student Assistance in Bilingual Education and Resources

Sarah J. Hale High School

Location: 345 Dean Street
Brooklyn, New York

Year of Operation: 1979-1980, Last year of funding

Target Language: Spanish

Number of Students: 150

Principal: Bernard Wolinez

Project Coordinator: Alba Del Valle

INTRODUCTION

Project Student Assistance in Bilingual Education and Resources (SABER) was funded for fiscal year 1979-80 as a continuation grant under the provision of the Elementary and Secondary Education Act-Title VII. This funding period completes a five-year cycle for which the program was originally approved. SABER is a basic bilingual secondary education program operating within an organizational unit of Sarah J. Hale High School, Brooklyn, New York. Project SABER offered bilingual instructional and supportive services to 150 Hispanic students of limited-English proficiency (LEP) from grades 9-12. Program teachers were trained through in-service workshops, college courses, and direct assistance in the classroom. Program parents and community were involved in the students' education with the collaboration of the Community/Parent Advisory Board. Additionally, the program has developed and adopted Math and Science curricula and materials for use in bilingual secondary education (Spanish-English).

PROGRAM GOALS AND OBJECTIVES

The ultimate goal of the program is to improve the academic performance of 150 Hispanic LEP students in English. Its instrumental goal is to develop a comprehensive bilingual-bicultural secondary education course of study to be implemented by effective instructional and support services personnel trained in the areas of specialization required by the target population. Further, it aims at the involvement of parents in the educational process of their children.

Specifically, the program evaluation considers the following objectives for the 1979-80 project period:

1. To improve achievement in English as indicated by the acquisition of at least one objective per month of treatment on the Criterion Referenced English Syntax Test (CREST).
2. To increase reading achievement in Spanish as indicated by a statistically significant (α = .05) difference between pre-post scores on C.I.A. Prueba de Lectura.
3. To improve students' English language proficiency as indicated by a statistically significant (α = .05) difference between pre-post scores on a program-developed test, Test of Proficiency in English Language Skills.
4. To increase the performance of students in Spanish Language Arts as indicated by a proportion of at least 60% of students passing a City or State Spanish examination.
5. To increase the proportion of students passing examinations in the content areas as indicated by a greater proportion of

program than non-program students passing exams in the areas of Math, Science, and Social Studies.

6. To improve the attendance rate of program students as indicated by a statistically significant (α = .05) difference between proportions of school (non-program) and program attendance.

SITE

Project SABER is housed in the building for special programs of Sarah Hale High School at 500 Pacific Street in Brooklyn. The school vicinity is residential, and mostly low income. A commercial zone is nearby which makes the whole area easily accessible by public transportation and very active during the daytime.

The ethnic composition of the community is Black American, the largest proportion; Hispanic, second largest; and Haitian. The community is characterized by problems typically found in poor urban areas such as unemployment, a high mobility rate, and health problems. However, housing facilities in the area indicate that the community is in better condition than other low income neighborhoods in New York City.

Although Spanish is spoken in the houses of Hispanics and in some small businesses, English prevails. Much Black English is heard on the school grounds.

STUDENT CHARACTERISTICS

Eligibility for participation in the program is determined by the students' score on the NYC Language Assessment Battery (LAB). Other criteria used for entry are referrals by feeder schools and teachers within the school. The program also enrolls most of those students who are new arrivals to the country who have settled in the vicinity.

Although the largest percentage of Hispanics in the community is Puerto Rican, the largest percentage of Hispanic students is Dominican (from the Dominican Republic). Most other Hispanic students were born in Central and South American countries. This latter group is about 50% of the total number.

It is important to note that the majority of Hispanic students in this program are fully literate in their native language. Even though their need for the use of English in out-of-school functions is limited, their progress in English seems to increase rapidly after a short time in the country.

According to teacher and counselor judgment, the students may be roughly categorized into two major groups with varied needs. One group is mostly composed of students from Puerto Rico and the Dominican Republic. In general, their family life may be described as unstable (living with one parent or relatives), of low income and low levels of education. These students need improvement in content areas, study habits, and English.

The other group is composed of students from Central and South America. Their family background, in general, is quite different from the previous group. They have a more stable family life (live with both parents and siblings), their families had a middle income position in their country of origin and are educated. The primary adjustment need of this group is to increase English language proficiency.

PROGRAM DESCRIPTION

Philosophy

Although the explicitly stated philosophy of the program is to expedite the acquisition of English through native and second language instruction, the actual practice reflects an effort to develop and maintain the students' capacity in both languages. The transition into English is made gradually. The students' cognitive and affective needs are of prime importance in the design of this transitional process.

The operant philosophy seems to be shared and supported by the school administration and most of the program personnel.

Program Organization and Personnel

The program has a five year history. It was originally designed by the English Department of which Ms. Del Valle, their present coordinator, was a staff member. Prior to the receipt of a five year Title VII grant, the school had initiated a Pilot Project funded under the mandate of the Aspira Consent Decree, but only engaged in materials development.

Presently the program functions under the supervision of the Assistant Principal in charge of the English Department for matters related to personnel and materials. The Program Coordinator has responsibility for all program administration and supervision, including instructional, training, and fiscal matters. She reports directly to the school principal on matters other than personnel and materials. An Assistant Coordinator aids the Coordinator in matters related to student services, primarily counseling, and parent/community relations. Both Coordinator and Assistant hold Master's Degrees in Education,

are certified teachers of the New York City school system, and have extensive experience serving bilingual populations. Both are native speakers of Spanish.

A Resource Teacher and a Curriculum Specialist provide assistance to bilingual teachers in the Program. The former serves as a resource in the areas of Math and Science. The latter develops and adopts curricula and assists teachers in their use. The Resource Teacher holds a doctoral degree in Mathematics. The Curriculum Specialist holds a Master's Degree in Education. Both are certified teachers in the NYC school system, have extensive experience with bilingual populations, and are native speakers of Spanish.

All staff members are currently enrolled in graduate programs in specialized areas of Education after having completed their specialization in Bilingual Education.

A Bilingual Secretary is responsible for office management, book-keeping and typing. She is enrolled in a professional development program at the undergraduate level.

An Educational Assistant aids the teachers, and a Family Assistant works with the guidance Counselor in maintaining frequent communications with parents. Both hold Associate's Degrees and have experience working with bilingual populations.

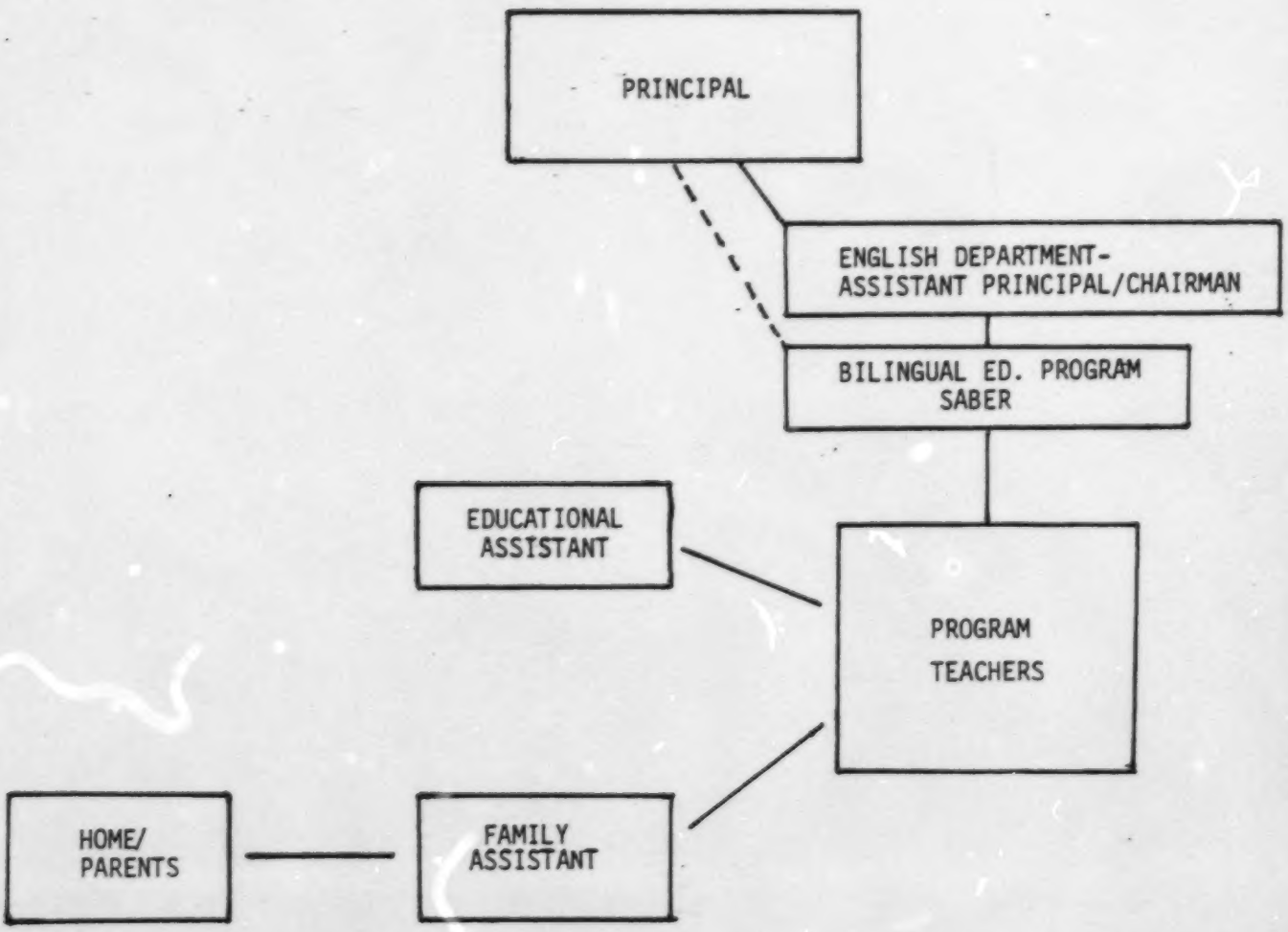
The formal organizational arrangements and the existing informal channels of communication facilitate, in general, all administrative, supervisory, instructional and supportive service functions of the program.

The following presents the organization of Project SABER personnel:

TABLE I

SARAH HALE HIGH SCHOOL

PROJECT SABER



INSTRUCTIONAL COMPONENT

Programming and Mainstreaming

Instructional programs are designed according to individual needs. Programming, done by grade advisors, considers not only LAB scores but the student's past educational record, his or her academic and vocational needs and interests. Thus, programs are highly diversified. Some programs concentrate exclusively on academic areas. Others combine required academic areas with vocational courses. Courses such as Business Education, Cosmetology, Health Careers, Metal Shop, Print and Photography are taken only by some students. These courses are offered in English only and, generally, in the 11th or 12th grade. Courses such as Physical Education, Art, Music, and Practical Arts are taken by all. These courses are taught in English only. These required classes taught in English also serve to integrate Bilingual Program students with non-program students. Courses such as Math, General Science, Social Studies, Biology, Latin American History, Spanish, and Economics are taught in Spanish. English as a Second Language and Special Reading classes are taught exclusively in English.

On the average, a beginning student in English receives two hours of ESL a day. As he/she progresses, the number of hours taught in English increases and the number taught in Spanish decreases. A Senior who has gone through a whole program, for example, may have a full program in English and only one course taught in Spanish.

The instructional offerings are designed to meet the students' linguistic and academic needs as well as his or her cultural background. Knowledge of Hispanic American culture and the culture of the United States

is offered through coursework. Actual cultural experiences are gained through daily interaction between staff, teachers, and students. Students are exposed to teachers of both Hispanic and American backgrounds and they relate to these in ways that reflect different cultural (and, naturally,personality) styles.

Students' needs are met not only by the individualized instruction provided in classes, but also by tutorial services offered by program staff on their own time (before or after school hours). In the staff's judgment, the tutorial approach is highly effective with students in great need as well as students who are advanced but wish further improvement.

In order to reach more of the students in need, it is believed by some staff members that it may be necessary to implement a more systematically planned program in which "lab" sessions are conducted. These would be working sessions in which students could apply the knowledge gained in theoretical and conceptual lessons.

Transition into English-taught classes other than Physical and Health Education is made on the basis of LAB scores, teacher-made test scores, recommendations and CREST test scores. The transition is made gradually, generally beginning with Physical Education, Art and Music, progressing to elective courses, and finally to required courses. According to the Program Coordinator, most seniors who are mainstreamed are successful. However, parents make the final decision regarding their children's mainstreaming and many often opt to have their children continue in the program. A few students who have been mainstreamed continue to take at least one course in the program (such as Spanish or Latin American Literature).

Of the 150 students whom the program served during the 1979-80 period, 95 left the program because of graduation or a variety of other reasons. These are summarized in Table II, below.

Overall, 40% of the program students exited as a result of mainstreaming or graduation; 7% left to return to their native country; and 7% left the program for some other instructional alternative. The Project Coordinator estimates that 90% of the students who graduate pursue a college education. The particular programs they pursue depend on areas of interest and availability of bilingual instruction.

FUNDING FOR INSTRUCTIONAL AND NON-INSTRUCTIONAL COMPONENTS

The Program combines two major sources of funding for the Instructional Component: Tax levy and Title I, ESEA. Through Title I, four teachers and four paraprofessional assistants are employed to teach Reading in English and English as a Second Language. Tax levy supports six teachers and three paraprofessional assistants who teach the content areas in the native language (Spanish).

All of the administrative and support service personnel who complement the instructional component are supported by Title VII of ESEA.

TABLE II

NUMBER AND PERCENTAGE OF STUDENTS

LEAVING PROGRAM, AND REASON GIVEN FOR EXIT

REASON	N	%
Fully Mainstreamed	25	17
Graduated	35	23
Discharged to Alternative Program	10	7
Transferred/Moved	10	7
Transferred to Non-Bilingual Program at Parents' Request	1	0.6
Returned to Native Country	10	7
Married	2	1.3
Discharged, Not Found	2	1.3
Total	95	64.2

TABLE III

INSTRUCTIONAL PERSONNEL BY FUNDING SOURCE

Instructional Component	Funding Source (s)	Number of Personnel: Teachers	Paras
E.S.L.	Title I	2	2
Reading (Eng.)	Title I	2	2
Native Language	Tax Levy	2	0
Math	Tax Levy	2	1
Social Studies	Tax Levy	1	1
Science	Tax Levy	1	1
Other (Voc. Ed., etc)	Tax Levy	*	*

* Wide selection of courses available to students in the Bilingual Education Program offered by personnel supported by tax levy funding.

The major source of funding for the non-instructional component of the program is Title VII-ESEA. This source supports two positions for Curriculum Development and Implementation; one position for Student Services; one position for Administration and Staff Development; and one position for Parental and Community Involvement.

TABLE IV

NON-INSTRUCTIONAL PERSONNEL BY FUNDING SOURCE

Area	Funding Source	Personnel
Curriculum Development	Title VII ESEA	1 Curriculum Specialist 1 Resource Teacher
Supportive Services	Title VII ESEA	1 Guidance Counselor
Staff Development	Title VII ESEA	1 Coordinator* 1 Consultant
Parental/Community Involvement	Title VII ESEA	1 Coordinator* 1 Family Assistant
Administration	Title VII ESEA	1 Coordinator*

* The program has only 1 Coordinator with responsibility for 3 separate functions.

NON-INSTRUCTIONAL COMPONENT

Curriculum and Material Development

The curriculum followed by Project SABER is in accordance with the regulations established by the NYC Board of Education and the guidelines set by New York State. Curriculum has been developed specifically for bilingual

secondary education students in the areas of Math and Science. However, in the areas of science, only General Science and Biology are encompassed. Social Studies follows the curriculum set by a variety of selected textbooks. These textbooks are used in accordance with a sequence outlined by Project staff.

The Social Studies curriculum offered by the bilingual program differs from that offered by the monolingual program in that the former focuses on the Caribbean and Latin America, whereas the latter encompasses Western and Eastern Civilizations.

The curriculum used for Spanish is the NYC Guide for the Teaching of Spanish to Spanish Speakers. Materials are those produced by the Modern Language Association. English as a Second Language follows the guidelines set by the English Department and uses a variety of commercially made materials which are accepted and widely used in NYC.

All other subject areas are offered in "mainstream" classes and use curricula and materials set by the NYC Board of Education.

The program makes use of curriculum and materials it develops and adapts, as well as other ESEA Title VII project produced materials and resources. A listing of subjects offered by the Bilingual Program appears as Table V, below.

Supportive Services

All program students receive supportive services from program staff as well as school personnel.

TABLE V

SUBJECTS TAUGHT DAILY IN SPANISH
USING ADAPTED FORMS OF
THE NYC BOARD OF EDUCATION CURRICULA

American Studies

Caribbean History and Culture

Latin American History and Culture

Economics

General Science

General Biology

Fundamental Mathematics

Algebra (Second and Third Terms of a Three-Term Sequence)

Spanish for Spanish Speakers

Guidance. The Program's bilingual guidance counselor conducts weekly assessments of students' need for guidance through short questionnaires distributed to teachers. On the basis of teacher response, the student is interviewed and the home is contacted. During the course of the year, all students receive guidance services whether referred or not. Success in guidance services, according to counselor judgment, is due to the personal nature of the relationship established between counselor and student as well as teacher and student.

Home Visits. The counselor works closely with a Family Assistant who has visited most of the students' homes. The Family Assistant works with the family of the student who is receiving counseling services. Home visiting services are considered effective in helping to solve many of the students' personal and school problems, as well as creating a closer relationship between the school and the community.

Career Education. A teacher provided career counseling services to all students participating in the program. Additional career counseling services are available to students from other personnel made available through the school.

Staff Development

All teachers in the Program are presently enrolled in graduate programs in specialized areas of Education. All have completed at least a Master's Degree in Education and/or Language and most have a specialization

in Bilingual Education or English as a Second Language. Program staff and teachers attended public and independent colleges and universities in the New York area at least once a week to enhance their professional skills. They also attended workshops offered by an independent consultant to the program who specializes in Educational Psychology-Elementary and Secondary Education. These workshop sessions took place during the school day and were open to both bilingual and monolingual teachers. According to the Project Coordinator, all teachers participated in these sessions once every two weeks. Approximately 5 monolingual English-speaking teachers participated in each session.

The Project Coordinator attended the annual NABE Conference and the staff attended local conferences of teacher organizations and institutions of higher education.

Interviews with teachers indicate a need for a more systematically planned and implemented staff development component. In-service sessions offered during the 1979-80 period may not have been focused sufficiently on identified teacher needs and they may not have been offered with the necessary frequency.

Parental and Community Involvement

The Project has an Advisory Committee of 20 persons composed of parents, teachers, and students. The Committee functions to review the implementation of the program and to act in an advisory capacity. The Committee, formed by selection and election, meets once a month and serves to disseminate information to the community about the Project.

Activities designated by the Board of Education on specific dates are carried out by the program. Parents participate and generally maintain telephone communication on an on-going basis.

Notices of meetings and activities are posted in Spanish and English in places highly frequented by the students' parents. Agendas and minutes of meetings are mailed regularly to parents of the students participating in the Project. Additionally, a program newsletter and a student literary magazine further inform the community about the program.

Program staff believe that parents feel comfortable communicating with teachers in their own language and in their own cultural styles. The personal nature of the relationship and the similarity in cultural background result in great parental cooperation with the school and, particularly, with the Project.

ASSESSMENT PROCEDURES AND FINDINGS

The following section presents the assessment instruments and procedures, and the results of the testing.

Assessment Procedures and Instruments

Students were assessed in English language development, growth in their mastery of their native language, mathematics, social studies and science. The following are the areas assessed and the instruments used:

English as a Second Language	--	Criterion Referenced English Syntax Test (CREST)
Reading in English	--	Test of Proficiency in English Language Skills
Reading in Spanish	--	CIA Prueba de Lectura (Total Score), Forms CE and DE.
Mathematics Achievement	--	New York City Computation Test (Mixed Fundamentals)
Mathematics Performance	--	Comparison with Mainstream Students of Percent Passing
Science Performance	--	Comparison with Mainstream Students of Percent Passing
Social Studies Performance	--	Comparison with Mainstream Students of Percent Passing
Native Language Arts Performance	--	Comparison with Mainstream Students of Percent Passing
Attendance	--	School and Program records

The following analyses were performed:

A) On pre/post standardized tests of English, Native Language Reading Achievement and Mathematics Achievement statistical and educational significance are reported:

1) Statistical Significance was determined through the application of the correlated t-test model. This statistical analysis de-

monstrates whether the difference between pre-test and post-test mean scores is larger than would be expected by chance variation alone; i.e. is statistically significant.

This analysis does not represent an estimate of how students would have performed in the absence of the program. No such estimate could be made because of the inapplicability of test norms for this population, and the unavailability of an appropriate comparison group.

2) Educational Significance was determined for each grade level by calculating an "effect size" based on observed summary statistics using the procedure recommended by Cohen.[1]

An effect size for the correlated t-test model is an estimate of the difference between pre-test and post-test means expressed in standard deviation units freed of the influence of sample size. It became desirable to establish such an estimate because substantial differences that do exist frequently fail to reach statistical significance if the number of observations for each unit of statistical analysis is small. Similarly, statistically significant differences often are not educationally meaningful.

Thus, statistical and educational significance permit a more meaningful appraisal of project outcomes. As a rule of thumb, the following effect size indices are recommended by Cohen as

---

[1] Jacob Cohen. Statistical Power Analysis for the Behavioral Sciences (Revised Edition). New York: Academic Press, 1977 Chapter 2.

guides to interpreting educational significance (ES):

a difference of 1/5 = .20 = small ES

a difference of 1/2 = .50 = medium ES

a difference of 4/5 = .80 = large ES

B) On the Criterion Referenced English Syntax Test (CREST) information is provided on the number of objectives mastered, and the number of objectives mastered per month of treatment. No results for mastery rates (percentage of objectives mastered versus attempted) or performance on test levels are given due to reporting inaccuracies.

C) The results of the criterion referenced tests in mathematics, social studies, science and native language arts are reported in terms of the number and percent of students passing content area courses in comparison to the number and percent passing similar courses among students in mainstream classes.

D) Information is provided on the attendance rate of students participating in the bilingual program, compared with that of the total school population.

The following pages present student achievement in tabular form.

TABLE VI

English as a Second Language

FALL

Results of the Criterion Referenced English Syntax Test (CREST) Reporting the Number of Objectives Mastered, and Objectives Mastered Per Month.

Grade	# of Students	Average # of Objectives Mastered	Average Months of* Treatment	Objectives Mastered Per Month
9	22	4.5	3.2	1.4
10	7	8.0	3.2	2.5
11	13	2.6	3.2	.8
12	6	5.3	3.2	1.7
Totals	48	4.6	3.2	1.4

*Instructional time between pre- and post-testing.

CREST results in the Fall for the combined Spanish speaking sample revealed that 4.6 objectives were mastered on the average. The total group mastered 1.4 objectives per month of instruction. Objectives mastered per month of instruction ranged from .8 (grade 11) to 2.5 (grade 10) indicating better than expected achievement in English language acquisition.

TABLE VII

English as a Second Language

Spring

Results of the Criterion Referenced English Syntax Test (CREST) Reporting the Number of Objectives Mastered, and Objectives Mastered Per Month.

Grade	# of Students	Average # of Objectives Mastered	Average Months of Treatment*	Objectives Mastered Per Month
9	15	4.5	3.2	1.4
10	20	3.3	3.2	1.0
11	16	1.8	3.2	.6
12	—	—	—	
Totals	51	3.2	3.2	1.0

*Instructional time between pre- and post-testing.

CREST results for Spanish speaking students in Spring for the total sample revealed that 3.2 objectives were mastered on the average. For 3.2 months of instruction, the total group mastered 1.0 objectives for every four weeks of instruction. The average number of objectives mastered per month of treatment ranged from .6 (grade 11) to 1.4 (grade 9). Thus, students demonstrated greater than expected achievement in English language acquisition.

TABLE VIII

English Language Achievement

Significance of Mean Total Raw Score Differences Between Initial and Final Test Scores in English Achievement of Students with Full Instructional Treatment on the Test of Proficiency in English Language Skills

		Pre-test		Post-test						
Grade	N	Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference	Corr. Pre/post	t	P	ES
9	26	134.3	32.0	149.6	23.3	15.3	.31	2.35	.025	.46
10	13	137.0	43.6	143.8	33.7	6.8	.87	1.14	NS	.32
11	12	184.1	17.6	168.1	29.1	-16.0	-.45	-1.59	NS	--
12	10	143.7	36.2	160.4	35.1	16.7	-.51	.85	NS	.27

Table VIII presents achievement data for Spanish speaking students on the Test of Proficiency in English Language Skills. Students in grades 9, 10, and 12 showed raw score gains of 15.3, 6.8, and 16.7 raw score points, respectively. Students in grade 11 showed a decrease of 16 raw score points. The gain for students in grade 9 was statistically significant at the .025 significance level, while neither the gains of students in grades 10 and 12 nor the loss of students in grade 11 reached statistical significance at the .05 probability level. Ninth grade students made a small to moderate educationally significant gain (ES=.46 units). Tenth graders, while not demonstrating a statistically significant gain, did make growth judged to be of practical or educational significance. This group consisted of only 13 students; hence, the lack of statistical significance may be a function of the small N. The post-test mean is a borderline ceiling effect based on a 0-200 possible score range for the instrument used. This probably contributes to the lower than expected pre-test, post-test correlation.

TABLE VIII
(continued)

Eleventh grade students declined by approximately 4/10 of a common within group standard deviation. Such results are obviously due to a powerful regression effect, and therefore, are meaningless statistically and psychometrically. The pre-test mean was 184 or 92% items correct based on a 0-200 possible score range. The group was already functioning at the test ceiling prior to instruction with no possibility for genuine growth. The pre-test standard deviation is rather small suggesting little differentiation among students in the function tested. This score range restriction undoubtedly resulted in the moderate negative correlation between pre- and post-test scores. Consequently, the observed decline in scores at post-test is little more than a statistical artifact. In summary, the language achievement of 11th grade students was very inadequately measured by this test. Hence, no meaningful assessment of program impact on student achievement is feasible. Students apparently knew more than the test could measure.

An argument similar to that made by 11th graders could be made with respect to 12th grade students, although this group showed a 17 point gain. This gain, while not statistically significant, was based on a small sample size. The gain was of small educational significance, however. A ceiling effect is not observed at pre-test, but does exist at post-test. The negative correlation is most likely a result of the small N and post-test ceiling phenomenon.

Summarizing, 9th graders showed statistically and educationally significant growth. Tenth graders made an educationally significant gain. The test functioned inadequately at the 11th and 12th grade levels from a psychometric and statistical point of view. For these upper grade levels,

TABLE VIII
(continued)

the test was too easy, resulting in meaningless results. This was very pronounced for 11th graders. It is suggested that the use of this test be reviewed for adequacy of measurement, especially at upper grade levels. While students in the junior and senior year demonstrate knowledge of English proficiency, this testing instrument is inadequate for showing improvement or growth among students. Consequently, the instrument does not possess test properties for adequate evaluation of the impact of educational instruction on student achievement in an area of academic knowledge that is of paramount importance in bilingual education.

TABLE IX

Spanish Reading Achievement

Mean Total Raw Score Differences Between Initial and Final Test Scores in Native Language Reading Achievement of Students with Full Instructional Treatment on the CIA Prueba de Lectura Total Score Level 2, Forms CE, DE.

		Pre-test		Post-test						
Grade	N	Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference	Corr. Pre/post	t	P	ES
9	26	65.8	22.2	79.6	22.6	13.8	.19	2.47	.025	.48
10	12	77.8	2.1	95.2	15.4	17.4	.23	4.06	.005	1.17
11	17	79.2	1.1	106.8	2.7	27.6	-.37	34.79	.000*	8.44
12	11	78.7	1.1	105.2	3.5	26.5	.27	26.1	.000*	7.86

*Exceeds all tabled values; significance probability approaches 0.0

Table IX presents achievement data in native language reading on alternate forms of the CIA Prueba de Lectura, level 2. Grade 9 and 10 students demonstrated significant growth in statistical and educational terms. The low pre/post correlations indicate a non-linear score relationship. The reason for the low correlation is not readily apparent for 9th graders; students shifted in their relative ranking from pre- to post testing, suggesting the possibility that the attribute was not reliably measured. The low correlation for 10th graders may have been influenced by severe range restrictions at pre-test (S.D.=2.1) or the occurrence of a post-test ceiling effect (total possible score range: 0-125), which contributed to little differentiation among students in the tested function.

The results for students in grades 11 and 12 require explanation. The pre- to post-test gains were statistically significant to a degree rarely encountered in empirical data. The ES indices would also suggest unusual

TABLE IX
(continued)

growth. Statistically, however, these gains are spurious and artifacts of testing. That is to say, the level of the test employed was far too easy for 11th and 12th graders which resulted in a highly conspicuous ceiling effect that is pronounced for post-test results. Given the ceiling effect, little or no test variance at each test occasion, and very low or negative pre/post correlation coefficients, , it must be concluded that the results cannot meaningfully assess project impact on student achievement.

It is recommended that assignment to test level procedures be re-evaluated for this instrument. The present test level does not function adequately, most especially for students in the 11th and 12th grades. Consequently, the real improvement that students did make is masked by inappropriate instrumentation.

TABLE X

Mathematics Achievement

Significance of Mean Total Raw Score Differences Between Initial and Final Test Scores in Mathematics Achievement of Students with Full Instructional Treatment on the New York City Arithmetic Computation Test (Mixed Fundamentals Subtest)

		Pre-test		Post-test						
Grade	N	Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference	Corr. Pre/post	t	P	ES
9	24	25.1	19.6	40.7	19.6	15.6	.10	2.91	.005	.59
10	20	15.6	11.2	43.6	25.8	28.0	.11	4.65	.001	1.04
11	12	18.7	7.3	64.8	18.1	46.1	.13	8.56	.001	2.47
12	13	14.3	5.5	53.2	18.7	38.9	.63	8.83	.001	2.45

Students tested with the Mixed Fundamentals Subtest of the New York City Arithmetic Computation Test demonstrated very large raw score gains. The gains ranged from 15.6 points in grade 9 to 46.1 points for 11th grade students. All gains are highly significant statistically. The standardized gains are of substantial educational significance in grades 10 through 12, and of moderate educational significance for 9th graders. The pre/post-test correlations ranged from .10 in grade 9 to .63 in grade 12. These correlations are very small especially in the lower three grades. Contributing to these observed correlations most likely is the much smaller pre-test standard deviations relative to post-test dispersions (except in grade 9) which indicates score range restriction at pre-test, and thereby, very little differentiation in the function measured on Fall testing.

TABLE XI

Number and Percentage of Mainstream and Bilingual Program Students Passing Content Area Courses 1979-1980

	BILINGUAL PROGRAM STUDENTS					MAINSTREAM CLASSES				
SUBJECT	NO. OF STUDENTS	NO. OF CLASSES	NO. FAILED	NO. PASSED	% PASSED	NO. OF STUDENTS	NO. OF CLASSES	NO. FAILED	NO. PASSED	% PASSED
GENERAL SCIENCE	29	1	5	24	83%	519	18	245	274	53%
GENERAL BIOLOGY	22	1	1	21	95%	504	15	242	262	52%
AMERICAN STUDIES	21	1	3	18	86%	230	7	69	161	70%
LATIN AMERICAN HISTORY & CULTURE	23	1	8	15	65%	NO COMPARISON				
CARIBBEAN HISTORY AND CULTURE*	24	1	10	14	58%	27	1	12	15	56%
ALGEBRA- 1st TERM	14	1	3	11	79%	173	5	90	83	48%
ALGEBRA- 2nd TERM	17	1	4	13	77%	56	2	33	23	41%
ALGEBRA II	21	1	5	16	76%	53	2	17	36	70%
FUNDAMENTAL MATH	19	1	8	11	58%	318	10	184	134	42%

*Mainstreamed Students took Puerto Rican Studies

TABLE XI
(continued)

Table XII presents the number of students in the bilingual program and mainstream classes passing and failing content area courses and the percentage passing. Students in the bilingual program classes surpassed the mainstream classes in percentage of success in the three subject areas considered: science, social studies, and mathematics. The difference between these groups is greatest in General Biology in which 95% of the bilingual program students passed as compared with 52% of the mainstream class students. The next greatest difference is in Algebra- 2nd term, in which 77% of the bilingual program students passed as compared with 41% of the mainstream class students. The third and fourth areas of major difference were Algebra- 1st term and General Science. In these areas, 79% and 83% of the bilingual program students passed as compared with 48% and 53% of the mainstream class students.

These results indicate that not only has the objective of having an equal or greater proportion of bilingual program students pass content area courses than mainstream class students been achieved, but it has been achieved substantially in the majority of areas in which comparisons were made.

TABLE XII

Attendance

Significance of the Difference Between Attendance Percentages of Program Students and the Attendance Percentage of the School

Average School-wide Attendance Percentage: 75%

Grade	N	Mean Percentage	Standard Deviation	Percentage Difference	t	p
9	31	71.5	18.4	-3.5	-1.06	NS
10	36	81.4	9.72	+6.4	+3.98	.001
11	29	81.6	16.9	+6.6	+2.10	.025
12	18	93.5	20.1	+18.5	+3.90	.005

Attendance rates for program students ranged from 72% (grade 9) to 94% (grade 12). Students in grades 10 through 12 attended school at rates which exceeded the school-wide rate of 75% by amounts that were statistically significant. The difference in program students' attendance rates in these upper grades (favoring the program students) ranged from 6.4% higher in grade 10 to a high of 18.5% for 12th graders. Students in grade 9 attended an average of 3.5% less than the students in the general student body. However, statistically this rate does not differ significantly from that of the school at large. Thus, the attendance of 9th graders in the bilingual program was equal to (statistically) that of the total school.

In summary, the attendance rates of 9th graders was equal to the school-wide average and the rates of students in grades 10 through 12 was significantly higher than that of the general school.

On the whole, the attendance objective was met and substantially surpassed by program students. Attendance rates were improved in comparison to the student body.

CONCLUSIONS AND RECOMMENDATIONS

The following is intended to highlight those areas of the program that are strong and those that need to be strengthened. Recommendations are based on findings made by the site evaluator and analysis of student achievement and attendance data.

Conclusion #1

Despite limitations of the student selection process, there are indications that students are adequately diagnosed and placed according to linguistic and academic need. The student population is heterogeneous in most characteristics of relevance to academic performance and English language acquisition; but in particular, it is varied in 1) native language literacy, 2) academic proficiency, and 3) study habits. These characteristics may be related particularly to family background variables in the country of origin, i.e., socio-economic level and education. The student population is least heterogeneous in the need to increase English language proficiency.

Recommendation #1

Given the heterogeneity of students in native language literacy, academic levels, and study habits, attention should be focused on the group with greatest need in these areas. Planned formal and informal means of enhancing these skills should be implemented. Peer instruction is one approach suggested. The faculty suggests special "laboratory sessions" for practical problem-solving skills development.

Given the students' low degree of hetrogeneity in English language proficiency, more "bilingual approaches" might be used for instruction in the content areas in which students are most proficient. Mathematics, for example, might be taught in Spanish and summarized in English or topics

may be allocated equal time in each language. Thus, more articulation may be established between the ESL and content area programs which may lead to an increase in English language proficiency.

Conclusion #2

Program philosophy and practice reflect an effort to develop and maintain students' abilities in both English and Spanish. Transition into English is made gradually, considering cognitive and affective needs.

Recommendation #2

Students' successful transition into English should be monitored closely in order to determine which variables account for success. This information can be used to promote the advancement of English language skills for a greater number of students early in their secondary education experience across a variety of subject areas.

Conclusion #3

Formal and informal organizational arrangements and personnel qualifications facilitate the delivery of effective services.

Recommendation #3

The possibilities of formalizing some of the informal practices which have been shown to be effective might be considered. The Project Director presently reports to the School Principal directly for particular purposes. The possibility of creating a Bilingual Education Department may be considered, particularly if the program continues to expand. The Department may serve as a model for other high schools.

Conclusion #4

The curriculum used in most subject areas is generally in accordance with the New York City Board of Education and New York State guidelines. The only exceptions occur in social studies. Social studies courses follow project designed curricula for Caribbean and Latin American studies.

Recommendation #4

The project might investigate the possibilities of programming for a closer correspondence between social studies curricula and those used by the monolingual program. This may be particularly important in the upper grades. Curricular provision is more specifically focused on language and culture. However, offerings may be enhanced by encompassing aspects of the monolingual program which are broader in scope, such as Eastern and Western Civilizations. Throughout a four year period, students may progress from the study of their countries and region of origin, to the United States, to the world.

Conclusion #5

Guidance services and home-program relations have been found to be systematically planned and effective. The personal nature of the relations established are identified as a major reason for success.

Recommendation #5

Given the effectiveness of these services it is recommended that the program continue to provide them in a similar manner, and if possible to expand and improve their offerings. Expansion and improvement may require additional personnel or time allocation, but the investment may be worthwhile in relation to the results obtained.

Conclusion #6

Program staff attend graduate schools of education and in-service workshops for professional development. However, a more systematically planned and implemented staff development program is needed.

Recommendation #6

In-service workshops should be planned on the basis of systematically conducted needs assessment. These workshops may be planned rigidly enough to encompass the major areas of teachers' professional development needs, and flexible enough to address topics of immediate need as they arise.

Conclusion #7

The program reported student achievement and attendance information. Included were English language performance, Spanish language performance, and achievement in mathematics, science and social studies. On the Criterion Referenced English Syntax Test, students enrolled in the ESL program achieved an average of 1.4 objectives per month of treatment in the Fall, and 1.0 objectives per month of treatment in the Spring. Generally, achievement was better than expected. On the Test of Proficiency in English Language Skills, ninth grade students demonstrated growth between pre- and post-testing which was statistically significant. Tenth through twelfth grade students failed to demonstrate gains which were statistically significant. However, for eleventh and twelfth grade students the testing was invalid inasmuch as the students were performing at the test ceiling at pre-test time. The test, in fact, was too easy for these students. Students tested in Spanish on the CIA Prueba de Lectura demonstrated gains between pre and post-testing that were statistically and educationally significant at all grade levels.

In mathematics program students whose English skills were adequate were administered the New York City Arithmetic Computation Test. At all grades the differences between pre and post-tests were statistically and educationally significant. In addition, students' rate of success in mathematics, science and social studies was compared with that of mainstream students enrolled in the same classes being conducted in English. In every instance the percentage of program students passing the course content was superior to that of mainstream students.

Finally, program student attendance rates were compared with the school-wide attendance rate. Ninth grade program students attended school at a rate which was not statistically significant from the school-wide rate. At tenth through twelfth grades the program rate exceeded that of the total school at levels which were statistically significant.

Recommendation #7

The program is to be commended for an outstanding record of student performance in the content areas and in attendance. Performance on the CREST was good. However, the Test of Proficiency in English Language Skills appears to be too easy to measure growth of program students, especially those at the eleventh and twelfth grade levels. The use of this test should be reconsidered, or at least the test should be modified to more nearly reflect the true range of student performance. Likewise, the results in Spanish reading as measured by the CIA Prueba de Lectura, while positive and statistically significant, demonstrated properties which resulted in gains which may be considered to be spurious and artifacts of testing. It is recommended that the assignment to test level procedures for this instrument be re-evaluated, and that the testing process be more closely monitored.